
Application of knowledge management systems in Malaysian oil palm plantations' supply chain

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Abstract: Vertically integrated firms are streamlining activities in their supply chain by using knowledge management systems (KMS). Effective KMS need suitable combination of organisational and managerial initiatives and the use of suitable information technologies. Malaysian oil palm plantations have been recognised as leaders in technology development and adoption. KMS in the plantations started with the use of computerised inventory management systems. Subsequently, the plantation companies applied KMS to integrate various functions, including sourcing raw materials, production and support activities. This paper explores to what extent oil palm plantations have used KMS in managing their supply chain primary and support activities and how effective it is in increasing performance. Results of the study showed the plantation managers agreed that KMS have contributed significantly in improving the plantations' performance. However, greater use of existing KMS and adopting a more advanced IT will further improve performance at all stages of the supply chain.

Keywords: supply chain; knowledge management systems; information technology; primary activities; support activities; oil palm plantations.

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1 Introduction

A rapid development of information technology (IT) in Malaysia has enabled firms in manufacturing, agro-based and food-based industries improved their knowledge management systems (KMS) initiatives to produce more value-added products. KMS are applications of the organisation's computer-based communication and information processing systems to support specific knowledge management (KM) processes (King, 2007). KM processes consist of the generation, acquisition, storage and dissemination of knowledge (Mohayidin et al., 2007). According to Marwick (2001), efficient and effective KM typically requires a suitable combination of organisational, social and managerial initiatives and the use of suitable technologies using IT as an enabler. KM and IT have been recognised as a strategic tool to increase competitiveness and productivity of a firm. Even though KM is a relatively young topic in Malaysia, it has attracted many researchers. Most of these researchers (Hoon et al., 2004; Tehraninasr and Raman, 2009; Wong, 2008) focused their works, either on information technologies or management information systems in public organisations or industries. Studies on the application of KM in the agricultural sector especially in the area of supply chain management (SCM) have been very scarce.

Malaysian firms are also transacting using their capabilities of KMS and IT aggressively along their supply chain to enhance their competitiveness. The Malaysian palm oil industry (MPOI) is considered as one of the pioneers in this endeavour. Since its beginning, the success of the MPOI has been the result of the ideal climate, efficient milling and refining technologies, research and development (R&D), effective use of management tools and marketing strategies. The Malaysian Government has been fully committed to expand the palm oil industry and encouraged global expansion of palm oil production. Being competitive and profitable, the oil palm industry has continued to seek ways to improve performance by using better production and marketing strategies. This has contributed significantly to the growth of the agricultural sector, which has recorded a growth rate of 3.0–4.0% per year. Effective and reliable management tools and strategies, however, are needed to manage challenges and to preserve stability and competitiveness of the MPOI in the global market. To preserve the dominant position in the regional and international markets, the MPOI is striving to improve its productivity and competitiveness through continual technology innovation. The MPOI is finding effective